

"the inferences of animals" are said to be "habitual and intelligent, but not rational."

Voice, language, and phonetic spelling, especially the advantages of the last, are succinctly but clearly treated by Dr. A. B. Prowse.

For Botany, Mr. J. W. White has "Notes Supplemental to the Flora of the Bristol Coal-field," and Mr. C. Bucknell gives part xi. of "The Fungi of the Bristol District." Mr. C. Jecks offers some good suggestions as to the causes of the difference in the colour between the flowers and foliage of Tropical and of Temperate regions.

Local Geologists and others may well be thankful to Prof. C. Lloyd Morgan for his elucidation of the Geology of Tytherington and Grovesend, illustrated with a geological map and section along the Yate-and-Thornbury branch railway from the Midland Railway on its way to Gloucester. The Old Red Sandstone, the Mountain Limestone, and the Keuper beds constitute the country. Their subdivisions are compared with the strata at Clifton and elsewhere, and their faultings, discordances, and overlaps are carefully described and made to account for some of the physical features of the surface. Mr. T. M. Reade's work "On Mountain-building" is carefully and favourably reviewed by the Rev. M. B. Saunders.

Meteorological observations are given by Dr. G. F. Burder and Mr. D. Rintoul.

The Engineers have three excellent and most interesting papers:—on Sewage Systems, very fully and thoughtfully, by Mr. A. P. I. Cotterell; on the loading, delivery, and warehousing of Grain in all their details, by Mr. J. M. McCurrah; and Mr. G. E. Crawford's short but most noteworthy and technical explanation of the height, foundations, materials, shape, stability, and utility of the Eiffel Tower.

Thus at least five of the several branches of Scientific Research have received attention at Bristol, and some considerable increase of facts, generalizations, and practical application, during the past year; and doubtless these published papers and abstracts will be not only useful as memoranda, but will be good and fertile seed in further cultivation of the several fields of knowledge to which they belong.

PROCEEDINGS OF LEARNED SOCIETIES.

GEOLOGICAL SOCIETY.

November 6, 1889.—W. T. Blanford, LL.D., F.R.S.,
President, in the Chair.

The following communications were read:—

1. "Contributions to our Knowledge of the Dinosaurs of the Wealden and the Sauropterygians of the Purbeck and Oxford Clay."
By R. Lydekker, Esq., B.A., F.G.S.

The first section of this paper was devoted to the description of

the remains of Iguanodonts from the Wadhurst Clay near Hastings collected by Mr. C. Dawson. They were considered to indicate two species, for which the names *Iguanodon hollingtoniensis* and *I. Fittoni* had been proposed in a preliminary notice.

In the second section an imperfect metatarsus of a species of *Megalosaurus* from the Hastings Wealden was described, and shown to indicate a species quite distinct from the one to which a metatarsus from the Wealden of Cuckfield belonged. Two cervical vertebrae of a *Sauropterygian* from the Purbeck of the Isle of Portland were next described, and referred to *Cimoliosaurus portlandicus*, Owen, sp.

The concluding section described an imperfect skeleton of a large *Pliosaurus* from the Oxford Clay, in the collection of Mr. A. N. Leeds, which indicated a species intermediate between the typical Kimmeridgian forms and the genus *Peloneustes*. These specimens were considered as probably referable to *Pliosaurus ferox*. Evidence was adduced to show that *Pliosaurus Evansi*, Seeley, should be transferred to *Peloneustes*.

2. "On some Palaeozoic Ostracoda from North America, Wales, and Ireland." By Prof. T. Rupert Jones, F.R.S., F.G.S.

The chief materials referred to were:—

1. Some good specimens of North-American Ostracoda from the Lower Helderberg and Cincinnati Groups in the British Museum and the Author's collection; these have given occasion for a critical revision and careful illustration of several forms.

2. In the 'Palaeontology of New York,' vol. iii. 1859, several of the Palaeozoic Ostracoda of New York State were described but not figured. Copies of some of the original drawings have been courteously supplied, with Dr. James Hall's permission, by Mr. J. M. Clarke, of Albany. They enlarge our knowledge of the Lower Helderberg fauna.

3. A large collection of Palaeozoic Ostracoda, collected in the Lake Champlain district and elsewhere, sent by Prof. R. P. Whitfield, of New York, for examination by the Author.

4. Other specimens belonging to the Utica Slate Series from Ontario, presented to the Author by Dr. John Young.

5. An interesting series of Lower-Silurian (Ordovician) species from near Welshpool, comprising a characteristic Cincinnati species, sent by Mr. J. Bickerton Morgan.

6. A rare Palaeozoic Cytheroid Ostracod from Kildare, collected by Mr. Joseph Wright, F.G.S.

The specimens were described as nearly as possible in the order of their natural relationship, and thus, besides adding to the known forms, they were shown to illustrate the modifications exhibited by the genera and species of these minute bivalved Crustaceans, both in limited districts and in different regions.

Amongst the forms described were the following new species and variety:—*Primitia mundula*, Jones, var. *cambrica*, nov.; *P. humilior*, sp. nov.; *P. Morgani*, sp. nov.; *P. Ulrichi*, sp. nov.; *P. Whitfieldi*, sp. nov.; *Entomis rhomboidea*, sp. nov.; *Strepula sigmoidalis*, sp. nov.; *Beyrichia Hallii*, sp. nov.; *Isochilina lineata*, sp. nov.; *I.?* *fabacea*, sp. nov.; *Leperditia Claypolei*, sp. nov.; *Xestoleberis Wrightii*, sp. nov.

MISCELLANEOUS.

On a new Entoniscian (Pinnotherion vermiforme, gen. et sp. nov.) parasitic on the Pinnotheres of Modiola. By MM. A. GIARD and J. BONNIER.

THE animal which is the subject of this note is doubly interesting, as belonging to a group of little-known Crustacea and as furnishing a new example of parasitism in the second degree.

Crabs of the genus *Pinnotheres* occur commonly at Wimereux in *Mytilus edulis*, Linn., *Modiola modiolus*, Linn., and *Mactra stultorum*, Linn.; more rarely in *Cardium edule*, Linn., and *Donax anatinus*, Lam. Several specific forms are no doubt confounded under the name of *Pinnotheres pisum*, Linn. In September last we found in an old *Modiola* (covered with *Serpule* and all perforated by *Clione*) a female *Pinnotheres* of considerable size (15 mill. wide), but differing from *P. veterum*, Bosc, which is said sometimes to inhabit the *Modiolæ*. This female bore no ova, and the ovigerous feet were slightly atrophied. But our attention was particularly attracted by a violet-grey mass, visible through the transparent dorsal integument, and resembling in aspect an egg-mass of *Grapson Carolinii*, Giard. A puncture made with a slender-pointed pipette furnished mature embryos of an Entoniscian, and taking all the precautions indispensable in such cases, we were soon able to extract the adult female which contained these embryos in her incubatory cavity. The latter occupied the whole left side of the visceral cavity of the *Pinnotheres*, from the frontal margin of the carapace, and, contrary to what occurs in other Entoniscians, it was prolonged into the caudal portion of the Crab as far as the third segment of the abdomen. The genital glands of the host were atrophied, the liver much reduced and very pale. The sac enveloping the parasite adhered to the right branchial part and passed, as customary, beneath the intestine.

This parasite, which we shall call *Pinnotherion vermiforme*, belongs to a new genus. The characters, in the female sex, are furnished especially by the form of the first incubatory plate and by the